

ARDAMATSKAYA, T.B.

Snakes as exterminators of birds nesting in the hollows of trees.  
Trudy Probl. i tem. sov. no.9:338-341.'60. (MIRA 13:9)

1. Chernomorskiy gosudarstvennyy zapovednik.  
(Black Sea Preserve--Birds, protection of)  
(Serpents)

ARDAMATSKAYA, T.B.

Traveling nest. Priroda 50 no.5:116-117 My '61. (MIRA 14:5)

1. Chernomorskiy goszapovednik (Golaya pristan', Khersonskaya obl.).  
(Birds—Eggs and nests)

ARDAMATSKAYA, T.B.

Red-breasted merganser in the northwestern Black Sea region.  
Ornitologiya no.6:293-302 '63. (MIRA 17:6)

ARDAMATSKIY, N.A.; MILOSLAVSKIY, Ya.M.; LIKHVANTSEV, V.A.; LEGKUN, A.M.;  
TYUNINA, Ye.A.

Comparative evaluation of the results of studying the content  
of sodium and potassium in the plasma, whole blood and erythro-  
cytes in some internal diseases. Terap.arkh. 34 no.2:81-85 '62.  
(MIRA 15:3)

1. Iz kafedry fakul'tetskoy terapii (i. o. zav. - dotsent N.A.  
Ardamatskiy) Ryazanskogo meditsinskogo instituta imeni akad.  
I.P. Pavlova.

(SODIUM IN THE BODY) (POTASSIUM IN THE BODY)  
(BLOOD—EXAMINATION)

MILOSLAVSKIY, Ya.I.; ARDAMATSKIY, N.A.; IVANOV, Yu.V.; LIKHVANTSEV,  
V.A.; LEGKUN, A.M.; MASLENNIKOVA, A.I.; CHERNYSHEVA, M.I.;  
TYUNINA, Ye.A.; SHOLOKHOVA, G.I. (Ryazan')

Urinary excretion of 17-ketosteroids and 17-hydroxy  
corticosteroids in healthy people. Probl. endok. i gorm. 9  
no.3:76-80 My-Je '63. (MIRA 17:1)

1. Iz kafedry fakul'tetskoy terapii (ispolnyayushchiy  
obyazannosti zaveduyushchego - dotsent N.A. Ardamatskiy)  
Ryazanskogo meditsinskogo instituta imeni I.P. Pavlova.

MILOSLAVSKIY, Ya.M.; ARDAMATSKIY, N.A. (Ryazan')

Urinary excretion of tetrahydroxy derivatives of corticosteroids  
in healthy persons based on paper chromatography data. Probl.  
endok. i gorm. 9 no.5:62-66 S-0'63 (MIRA 16:12)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. I.B.  
Likhtsiyer) Ryazanskogo meditsinskogo instituta imeni akademi-  
ka I.P.Pavlova.

ARDAMATSKIY, N.A. (Ryazan')

Mechanism of the action of mercury diuretics in rheumatic  
heart defects. Nauch. trudy Riaz. med. inst. 14:215-221 '63.  
(MIRA 17:5)

ARDAMATSKIY, N.A. (Ryazan')

Some indices of the functional state of the adrenal cortex in patients with rheumatic heart defects and circulation insufficiency. Nauch. trudy. Riaz. med. inst. 14:181-189 '63.

Adenosinetriphosphoric acid deficiency in the myocardium of patients with rheumatic heart defects and circulation insufficiency. Ibid.:190-194 '63. (MIRA 17:5)



. ARDANSKIY, A., inzh.

Recommended building tools. Sel'. stroi. 9 no.3:10-12 My-Je '54.

(MIRA 13:2)

(Building--Tools and implements)

ARDAMATSKIY, N.A.; LIKHVANTSEV, V.A.; MASLENNIKOVA, A.I.; TYUNINA, Ye.A.

Functional indices of the adrenal cortex before and after administration of ACTH in some internal diseases. Vrach. delo no.4: 140 Ap'63. (MIRA 16:7)

1. Kafedra fakul'tetskoy terapii (ispolnyayushchiy obyazannosti zav.-dotsent N.A.Ardamatskiy) Ryazanskogo meditsinskogo instituta.  
(ADRENAL CORTEX) (ACTH)

*11-125-1126*  
ARDASENOV, N., podpolkovnik.

Captain Popov, military engineer. Voen.-inzh. zhur. 101 no.10:29-31  
0 '57. (MLRA 10:11)

(Popov, Stepan Ivanovich)

ARDASENOV, N., podpolkovnik

Work experience of a company commander in planning tactical and political training. Voen.-inzh.zhur. 101 no.12:9-10 D '57.  
(Military education)

SAMOYLOVICH, D. N. BARINOVA, Ye. S., and ARDASHEV (fnu)

"On the possibility of change of sensitivity of nuclear emulsion during irradiation"

Fourth International Colloquium on Photography (Corpuscular) - Munich,  
West Germany, 3-8 Sep 62

ARDASHEV (fnu), BARINOVA, Ye.S., SAMOYLOVICH, D.M., RYABOV, V.D., and YUKHNOVSKAYA, O.P.

"On the chemical ripening of the R emulsion"

Fourth International Colloquium on Photography (Corpuscular) - Munich, West  
Germany, 3-8 Sep 62

ARDASHEV, B.I.; TERTOV, B.A.

Certain problems of quinoline chemistry. Uch.zap.RGU no.60:191-  
205 '59. (MIRA 14:10)

(Quinoline)

ARDASHEV, A.B.; MIZROKH, L.I., nachal'nik planovogo otdela tresta.

For effective organization of construction work. Gor.khoz. Mosk.  
29 no.12:9-11 D '55. (MLRA 9:3)

1. Upravlyayushchiy trestom "Moszhilgoststroy" (for Ardashev).  
(Moscow--Construction industry)



ARDASHEV, A.I. (Rostov-na-Donu)

Mechanism of the synthesis of quinolines. Usp.khim. 23 no.1:45-61 '54.  
(MLRA 7:1)

(Quinoline)

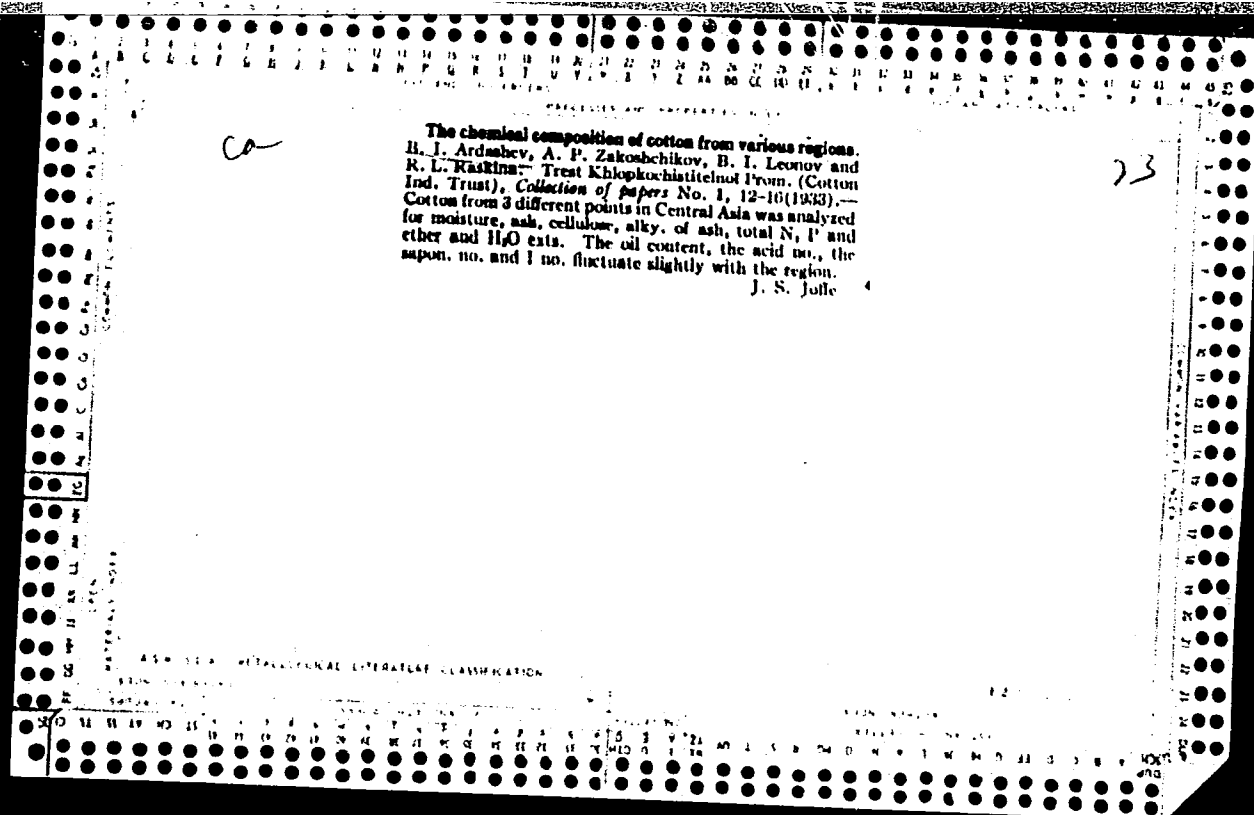
ARDASHEV, B. I.

PROCESSES AND PROPERTIES INDEX

11.0

The ash constituents of cotton fibers at various stages of maturity. B. I. ARDASHEV AND H. I. LEMONOV. *Trudov Sredneaziatskogo Nauch.-Issledovatel. Inst. Khlebovodstva, Khlepkhod Prom. Irrigatsii* (Trans. Middle Asiatic Sci. Inst. Cotton Culture, Ind Irrigation) Byull. No. 50, 72-80(1931).—With the ripening of cotton the ash content relatively decreases; especially is this true for the alk. earth and alkali bases. The percentage of Ca increases in the ash. The Navrozk variety is similar in compn. to that of the American varieties with the exception of higher Ca and S. J. S. Joffe

ASO S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX																									
LIST AND 4TH ORDERS													LIST AND 4TH ORDERS												
<p><i>ca</i></p> <p>The chemical composition of cotton hybrids. <u>11.1</u> Artyashov, A. P. Zakoschikov, B. I. Leonov and R. I. Ruskina, Trest Khlopokochistitel'noi Prom. (Cotton Ind. Trust), <i>Collection of papers</i> No. 1, 16-10(1933). - The oil content was higher in the hybrids from upland (American) and Egyptian cotton; the ash content was also lower in the fiber, an indication of an improvement in the quality of the fiber. I. S. Ioffe</p> <p><i>23</i></p>																									
METALLURGICAL LITERATURE CLASSIFICATION																									

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<p>Constants of the materials obtained in delinting with gaseous hydrogen chloride at ordinary temperatures. H. I. Ardashov, <i>Trest Khimicheskikh Prom. (Cotton Ind. Trst)</i>, Collection of papers No. 1, 47-83 (1933).-- A. presents data and discusses the significance of the detus. of <math>\alpha</math>-cellulose, Cu no. and viscosity for characterizing the products in the delinting process. An increase in the time of HCl contact with the cottonseed increases the Cu no. and the hydrocellulose. By treating cellulose with an oxidizing agent like <math>Cr_2O_3</math> oxycellulose is obtained and the Cu no. exceeds 4.5; in this manner the oxycellulose can be differentiated from hydrocellulose. J. S. Joffe</p>																									
<p>COMMON ELEMENTS</p>																									
<p>MATERIALS INDEX</p>																									
<p>ASME 31.4 METALLURGICAL LITERATURE CLASSIFICATION</p>																									
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PROCESSING AND PROPERTY INDEX																									
1ST AND 2ND ORDERS													3RD AND 4TH ORDERS												
<p><i>ca</i></p> <p><b>Delinting cottonseed with hydrogen chloride gas.</b> H. L. Arghashey and B. T. Leonov. <i>Trest Khlopkochisl'sel'not Prom.</i> (Cotton Ind. Trust), <i>Collection of papers</i> No. 1, 55-73(1033); cf. C. A. 27, 5085.—A 2% HCl concn. (percentage by wt. of seed) is effective in delinting. The H<sub>2</sub>O content of the seed has to be 7-10% for efficient reaction with the HCl. Up to 60° the heating (7 min.) does not impede the germination. At 20° the time of contact with the HCl is 15-30 min. The cellulose obtained by delinting can be used as such, but on more prolonged contact the hydrolytic effect produces a lot of sugar.</p> <p>J. S. Joffe</p> <p><i>73</i></p>																									
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									

**Constants of linters removed from cotton seeds by the action of gaseous hydrochloric acid at ordinary temperature.** B. I. Ardasher. *J. Applied Chem.* (U. S. S. R.) 6, 75-83(1933).—In the treatment of cotton seeds with gaseous HCl a product similar to that obtained by Girard was produced. It has a low viscosity and can probably be used in the metal-varnish industries. Detna. were made of α-cellulose, Cu no., viscosity, stability toward Ba(OH), and loss in wt. on boiling with a 7.14% soln. of NaOH. Twenty-seven references.

A. A. Bochtling

*ca*

*7*

Methods of analysis of crude anthracenes. R. I.  
Ardashev. *Org. Chem. Ind.* (U. S. S. R.) 1, 353-9  
(1938).—The literature with 20 references is reviewed and  
tentative methods of analysis are discussed. C. B.

AND SEA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND GROUPS																										3RD AND 4TH GROUPS																									
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<p>CA</p> <p>21</p> <p>Treatment of crude anthracene. I. Ya. Postovskii, R. L. Ardashev and V. I. Khmelevskii. Russ. 52,391, Dec. 31, 1937. Crude anthracene is treated with maleic anhydride and alkali to form a sol. compd. The soln. is sepd., acidified, and heated to 270° to sep. anthracene. From the anthracene-free residue carbazole is obtained by treatment with H<sub>2</sub>SO<sub>4</sub> in the presence of C<sub>2</sub>H<sub>6</sub>.</p>																																																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

1ST AND 2ND CODES																										3RD AND 4TH CODES																									
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<p>Production of highly concentrated anthracene, carbazole and phenanthrene from crude anthracene. H. I. Ardashov and I. M. Polyakova. <i>Org. Chem. Ind. (U.S.S.R.)</i> 4, 601-5(1937).—The procedure is based on the condensation of anthracene in the crude product with maleic anhydride (I) to <i>endo-9,10-(<math>\alpha</math>-<math>\beta</math>-succinic anhydride)anthracene</i> (II) (cf. Clar, <i>C. A.</i> 26, 446). On the addn. of excess KOH the K salt of II is filtered from the carbazole-phenanthrene fraction, the filtrate is neutralized with HCl and the II ppt. is dried and decoupled at 270°. The condensation can be effected in C<sub>11</sub>, instead of xylene by using 75% excess I and boiling for 4 hrs. The carbazole-phenanthrene fraction, after drying at 70°, is dissolved in 10 vols. of C<sub>11</sub> and the carbazole is extrd. 3 times with 2 parts of concd. H<sub>2</sub>SO<sub>4</sub>. The acid soln. is poured into cold water, the carbazole is filtered, washed, dried and then sublimed and recrystd. from C<sub>11</sub>. The phenanthrene fraction is neutralized with Na<sub>2</sub>CO<sub>3</sub>, the C<sub>11</sub> is driven off and the residue is redistd. and recrystd. from alc., giving 20% of 75-80% phenanthrene. Its final sepn. from fluorine is being studied. The yields obtained are: 81-85% of 85-90% and 55-60% of 95-8% anthracene; 74-82% of 85-93% and 55-60% of 99% carbazole. The com. application of the procedure is being investigated. C. Blanc</p>																																																			
<p>ASR 51A METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			
<p>RECORDING UNIT</p>																																																			

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A new method for the determination of carbazole and anthracene in crude and concentrated anthracenes by the bromometric method. B. I. Ardashov. *J. Appl. Chem.* (U. S. S. R.) 10, 1132-41 (in French 1041) (1937).—  
(a) Dissolve 0.5 g. of sample contg. anthracene and carbazole in 15-20 cc. of 85-90% AcOH, while heating to boiling. Add 1-1.5 cc. concd. HCl. The ppt. formed at temps. below 70° does not interfere with the bromination. Cool the soln. to 35° and add from a buret a soln. contg. KBrO<sub>3</sub>, 16.72 and KBr 59.5 g. per l., with starch paper as an outside indicator, until a blue color on the indicator persists for 10 min. Then add 0.5 g. of KI dissolved in 25 cc. of water and 1-2 cc. of starch soln. and titrate the liberated I with Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub>. The amt. of Br used corresponds to the amt. of carbazole and anthracene. (b) Reflux the mixt. of crude anthracene 0.75,

maleic anhydride 0.35 g. and xylene 5 cc. in a round-bottom 300-cc. flask for 20 min. Cool, add through a condenser 60-80 cc. of water, and steam-distill the xylene. Wash the resulting ppt. with water until neutral, and treat as in (a). The ppt. contains carbazole and an adduct product of anthracene with maleic acid, which is not affected by the bromination. The percentage of carbazole is  $(CT \cdot 100)/(2.8698 \cdot A)$ , where C is cc. of KBrO<sub>3</sub>-KBr soln. used, T is titer of Br<sub>2</sub> with respect to Br, A is g. of sample, and 2.8698 is g. of Br corresponding to 1 g. of carbazole. (c) The amt. of carbazole can be calcd. from the results obtained in (a), if the amt. of anthracene is detd. by any other method. In this case the formula is  $\{[CT - A] \cdot 100\}/(2.8698 \cdot A)$ , where CT is the amt. of Br used for titrating carbazole and anthracene, A the amt. of Br calcd. for anthracene (detd. by any other method). The accuracy of the carbazole detn., the content of which in the mixt. is not less than 15%, is 1-2% and that of anthracene 4%. The detn. of carbazole by (a) requires 1 hr. and by (b) 2 hrs. Each reference. A. A. P.

CP

PROCESSES AND PROPERTIES INDEX

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Artificial resins. H. I. Ardashov and P. M. Bogatyrev. Russ. 53,390, June 30, 1938. The product of interaction of anthracene with maleic anhydride is heated with polyatomic alcs., such as glycerol or glycol, until resins of the desired m. p. and hardness are obtained.

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

13001 STEEL

13002 WIP ONE COT

13003 STEEL

13004 WIP ONE COT

13005 STEEL

13006 WIP ONE COT

13007 STEEL

13008 WIP ONE COT

13009 STEEL

13010 WIP ONE COT

13011 STEEL

13012 WIP ONE COT

13013 STEEL

13014 WIP ONE COT

13015 STEEL

13016 WIP ONE COT

13017 STEEL

13018 WIP ONE COT

13019 STEEL

13020 WIP ONE COT

13021 STEEL

13022 WIP ONE COT

13023 STEEL

13024 WIP ONE COT

13025 STEEL

13026 WIP ONE COT

13027 STEEL

13028 WIP ONE COT

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13093 STEEL

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13097 STEEL

13098 WIP ONE COT

13099 STEEL

13100 WIP ONE COT

**A new method for the determination of carbazole and anthracene in crude and in concentrated anthracenes by the bromometric method.** *Il. I. Aizdashev. Izv. Vuz. Inst. khim. S. M. Kirov 1938, No. 6, 70 p. Khim. Referat. Zhur. 2, No. 3, 831 (1939); cf. C. 1, 32, 1012.*

The method is based on the bromination of carbazole to form the dibromide. Anthracene, which is usually present in the crude product, is also brominated, but its content can be detd. in parallel detns. by the method of Poustovskiy and Khmurevskiy (in the form of the condensation product with the maleic anhydride). From the other substances present together with carbazole only acenaphthene can be brominated, but it is rarely present in appreciable quantities. In checking the method on artificial mixes. of anthracene, phenanthrene and carbazole the percentage error in some cases reached 5%. With a parallel detn. of N according to the method of Kakhald the content of other N compounds can be estd. The time required for the analysis of samples contg. only anthracene and carbazole is 1 hr. The procedure is as follows: Dissolve 0.5 g. of the sample in 10-20 cc. of a hot 80-100% soln. of  $\text{AsCl}_3$ , add 1-2 cc. of 12 N  $\text{HCl}$ , cool to  $80^\circ$  and add at this temp. an accurately measured vol. of a standardized soln. contg. 10.72 g. of  $\text{KBrO}_3$  and 30.5 g. of  $\text{KBr}$  in 1 l. Add the bromide-bromate soln. until the reaction to a 1-starch paper persists for 10 min. After this add a soln. of 0.5 g. of  $\text{KI}$  in 25 cc. of water and titrate the excess  $\text{I}_2$  with  $\text{S}_2\text{O}_3^{2-}$  to det. the excess  $\text{KBrO}_3$ .

W. R. Brown

1ST AND 2ND OPDERS																										PROCESSING AND PREPARATION NOTES																									
COMMON FLUORENE																										COMMON FLUORENE																									
<p>Derivatives of the phenanthrene and fluorene series.</p> <p>1. The fluorene content in a crude anthracene. B. I. Andashv, V. Lomovatskaya and K. Kacher. <i>J. Appl. Phys. Chem.</i> (U. S. S. R.) 11, 1344-7 (in French, 1347) (1938); cf. C. A. 32, 6430. The detn. of purity of phenanthrene sepd. from a crude anthracene by its m. p. and by its N (carbazole) and anthracene content leads often to false results, because of the presence of considerable units of fluorene, the physicochem. properties of which approximate those of phenanthrene (sol., b. p., etc.). The phenanthrene was sepd. from a crude anthracene by the previously described method. The yield of crude phenanthrene was 52-54% and that m. 100° was 20-25% (of the wt. of crude anthracene). The synthesis of acetylphenanthrene from the phenanthrene (m. 100°) sepd. from a crude anthracene, by the Friedel-Crafts reaction in PhNO<sub>2</sub> according to the Mosetig and Kamp method (cf. C. A. 24, 5037) failed. However, by increasing the reaction time from 7 to 80 hrs., 3.3 g. of 2-acetylfluorene, m. 132°, was obtained from 20 g. of the above phenanthrene (after extn. of the reaction mixt. with ethyl and petr. ethers, distg. the ethers <i>in vacuo</i>, and step-recrystg. from MeOH and petr. ether). Therefore, the "phenanthrene" sepd. from a crude Kemerovsk anthracene contained fluorene; moreover, in carrying out the Friedel-Crafts reaction under the above conditions, the phenanthrene (but not fluorene) formed a tar. In further work, 35-40% of fluorene was sepd. from the crude Kemerovsk phenanthrene. For identification purposes the 2-acetylfluorene was prepd. by mixing the precooled mixt. of 20 g. of dry fluorene in 40 g. of freshly distd. PhNO<sub>2</sub> with a mixt. of 20 g. freshly distd. AcCl and 33 g. of AlCl<sub>3</sub> in 140 g. of PhNO<sub>2</sub>. After allowing to react for 7 hrs., the reaction mixt. was poured into ice and treated with 20 cc. of concd. HCl. After steam-distg. the PhNO<sub>2</sub> and decanting the water, the ppt. was extd. several times with Et<sub>2</sub>O. The ext. was dried over NaHSO<sub>4</sub>, the <i>in vacuo</i> and recrystd. from an alc. Yield, 50%. 12 references.</p> <p style="text-align: right;">A. A. Podgorinov</p>																																																			
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1930-1939 1940-1949 1950-1959 1960-1969 1970-1979 1980-1989 1990-1999 2000-2009 2010-2019 2020-2029 2030-2039 2040-2049 2050-2059 2060-2069 2070-2079 2080-2089 2090-2099 2100-2109 2110-2119 2120-2129 2130-2139 2140-2149 2150-2159 2160-2169 2170-2179 2180-2189 2190-2199 2200-2209 2210-2219 2220-2229 2230-2239 2240-2249 2250-2259 2260-2269 2270-2279 2280-2289 2290-2299 2300-2309 2310-2319 2320-2329 2330-2339 2340-2349 2350-2359 2360-2369 2370-2379 2380-2389 2390-2399 2400-2409 2410-2419 2420-2429 2430-2439 2440-2449 2450-2459 2460-2469 2470-2479 2480-2489 2490-2499 2500-2509 2510-2519 2520-2529 2530-2539 2540-2549 2550-2559 2560-2569 2570-2579 2580-2589 2590-2599 2600-2609 2610-2619 2620-2629 2630-2639 2640-2649 2650-2659 2660-2669 2670-2679 2680-2689 2690-2699 2700-2709 2710-2719 2720-2729 2730-2739 2740-2749 2750-2759 2760-2769 2770-2779 2780-2789 2790-2799 2800-2809 2810-2819 2820-2829 2830-2839 2840-2849 2850-2859 2860-2869 2870-2879 2880-2889 2890-2899 2900-2909 2910-2919 2920-2929 2930-2939 2940-2949 2950-2959 2960-2969 2970-2979 2980-2989 2990-2999 3000-3009 3010-3019 3020-3029 3030-3039 3040-3049 3050-3059 3060-3069 3070-3079 3080-3089 3090-3099 3100-3109 3110-3119 3120-3129 3130-3139 3140-3149 3150-3159 3160-3169 3170-3179 3180-3189 3190-3199 3200-3209 3210-3219 3220-3229 3230-3239 3240-3249 3250-3259 3260-3269 3270-3279 3280-3289 3290-3299 3300-3309 3310-3319 3320-3329 3330-3339 3340-3349 3350-3359 3360-3369 3370-3379 3380-3389 3390-3399 3400-3409 3410-3419 3420-3429 3430-3439 3440-3449 3450-3459 3460-3469 3470-3479 3480-3489 3490-3499 3500-3509 3510-3519 3520-3529 3530-3539 3540-3549 3550-3559 3560-3569 3570-3579 3580-3589 3590-3599 3600-3609 3610-3619 3620-3629 3630-3639 3640-3649 3650-3659 3660-3669 3670-3679 3680-3689 3690-3699 3700-3709 3710-3719 3720-3729 3730-3739 3740-3749 3750-3759 3760-3769 3770-3779 3780-3789 3790-3799 3800-3809 3810-3819 3820-3829 3830-3839 3840-3849 3850-3859 3860-3869 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ARDASHEV, B. I.

Reaction of  $\alpha,\beta$ -unsaturated aldehydes with aromatic amines. I. The Skraup reaction mechanism. B. I. Ardashev (Novocherkassk Industrial Inst.). *J. Org. Chem. (U.S.S.R.)* 10, 47-52 (1946).—A review of the current ideas on the mechanism of the Skraup reaction is presented. A definite mechanism is proposed according to which polymerization products of allylideneaniline take part in the over-all reaction. Such polymerization products were isolated from the reaction mixt. under appropriate conditions. Although A. was unable to isolate compds. of the type  $RNHCH_2CH:CHNHR$  from  $PhNH_2$ -acrolein reaction mixts., a product of this type was isolated in the reaction of  $PhNH_2$ , while, in the case of  $PhNH_2$ , resins having the probable structure  $-NPhCH:CHCH_2-NPhCH:CHCH_2-$  were obtained. Heating of acrolein-aniline (prepd. according to Mann, C.I. 17, 77) with  $H_2SO_4$  failed to yield any quinoline.  $PhNH_2$  (14 g.) was slowly treated in a  $CO_2$  atm. with 8.1 g. acrolein which was distd. into the  $PhNH_2$  by evapn. at  $35-40^\circ$ ; the mixt. was heated to boiling for 1 hr., treated with alkali, and steam-distd.; no quinoline was detected. Addn. of 1 g.  $PhNH_2$ - $H_2SO_4$  to the reaction mixt. followed by treatment as above gave a trace of quinoline; addn. of 10 g.  $PhNO_2$  resulted in isolation of bpt 0.1 g. quinoline picrate.  $PhNH_2$  (15 g.) and 10 g.  $PhNO_2$  were treated slowly with 20 cc. concd. HCl, followed by 8.1 g. acrolein (as above) to yield 1.2 g. quinoline; the use of 15 cc. concd.  $H_2SO_4$  gave 1.8 g. quinoline. A modified Skraup procedure was then run, using 15.5 g. 14% HCl, 10 g.  $PhNO_2$ , 30 g. glycerol, and 22.5

cc.  $H_2SO_4$  to give 12.1 g. quinoline. The reaction residues in the above essentially neg. expts. were brown resins which, after soln. in benzene and reprecipn., m.  $87-90^\circ$ ; distn. of the resin yielded almost 50% distillable matter up to  $250^\circ$ ; no quinoline was detected in the distillate, nor did treatment of the resin with  $H_2SO_4$  result in its formation. However, the benzene-insol. fraction of the resin, dissolved in 15% HCl, filtered, and made alk. with NaOH, yielded variable amts. of quinoline only in expts. which gave detectable amts. of quinoline in the procedures given above. II. Reaction of aniline with crotonaldehyde. B. I. Ardashev and M. N. Kurbatov. *Ibid.* 53-1.—Crotonaldehyde (7.4 g.) was treated at  $0^\circ$  with 9.8 g.  $PhNH_2$  to give after 3 hrs. a sticky mass; stirring of this with  $Et_2O$  caused crystn. to a white solid, m.  $102-4^\circ$  (7.5 g., 49.7%). The filtration must be conducted rapidly to prevent resinification. The *crotonylideneaniline* so obtained is insol. in water, sol. in warm EtOH and dil. HCl (reprecipd. by NaOH). The reagents used must be absolutely pure and freshly distd. for successful prepn. of a cryst. product. Addn. of several drops of concd. HCl followed by distn. resulted in the formation of quinoline. It is thus shown that formation of quinoline by the Doerner-Miller method may proceed without intermediate formation of  $\beta$ -phenylaminobutyraldehyde. The resinous products obtained above may have structures analogous to those shown for  $PhNH_2$  in Part I (above). G. M. K.

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USSR/Chemistry - Quinoline  
Chemistry - Quinaldine

Mar 49

"Research in the Field of Derivatives of Quino-  
line: III, Mechanism of Quinaldine Synthesis,"  
B. I. Ardashev, Rostov/Don State U imeni V. M.  
Molotov, 5 1/2 pp

"Zhur Obshch Khim" Vol XIX, No 3

Discusses the mechanism of the synthesis of  
quinaldine from acetaldehyde and aniline. Sub-  
mitted 8 Oct 47.

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62/49T12

ARDASHEV, B. I.

USSR/Chemistry - Quinoline

Mar 49

"Research in the Field of Derivatives of Quinoline: IV, Synthesis of Quinaldine and Certain of Its Methyl Homologues From Aromatic Amines and Ethylene Glycol," B. I. Ardashev, Rostov/Don State U imeni V. M. Molotov, 5 1/4 pp

"Zhur Obshch Khim" Vol XIX, No 3

Synthesized quinaldine, o- and p-tolylquinaldines and 2-, 6-, and 8-trimethylquinoline from aromatic amines and ethylene glycol in a  $H_2SO_4$  medium. Quinaldine yield was 37% of theoretical. Submitted 8 Oct 47

62/49T12

Quinoline derivatives. V. Simultaneous condensation of aromatic amines and ethylene glycol with acetone or methyl ethyl ketone. II. 1. Ardashiev. *Zhur. Obshch. Khim.* (J. Gen. Chem.) 19, 1050-63 (1949); cf. C.A. 43, 7020g. — Condensation of  $\text{ArNH}_2$ ,  $\text{Me}_2\text{CO}$ , and  $(\text{CH}_3\text{OH})_2$  in the presence of  $\text{H}_2\text{SO}_4$  and  $\text{ArNO}_2$  yields quinaldine derivs., formed by a reaction which apparently proceeds through ethyldeneaniline derivs. which react with  $\text{Me}_2\text{CO}$  and cyclize to the final products; when  $\text{MeEtCO}$  is used in the reaction with  $\text{PhNH}_2$ , the chief product is 4-ethylquinaldine, indicating that the Me group of the ketone enters the reaction.  $\text{PhNH}_2$  (15.5 g.), 10 g.  $\text{PhNO}_2$ , and 50 g. freshl. distd.  $(\text{CH}_3\text{OH})_2$  were treated, after mixing, with 31 ml. concd.  $\text{H}_2\text{SO}_4$ , followed by 20 ml.  $\text{Me}_2\text{CO}$  with gentle warming on an oil bath (temp. unstated); after addn. the mixt. was refluxed gently 6 hrs. at  $140-5^\circ$ , cooled, dild., and steam-distd. to remove  $\text{PhNO}_2$ , while the residue was made alk. with 10%  $\text{NaOH}$  and again steam-distd., with the distillate being acidified by  $\text{H}_2\text{SO}_4$ , treated in the cold with 10 g.  $\text{NaNO}_2$ , and heated until N evolution stopped; another steam distn. and  $\text{H}_2\text{O}$  extn. gave 5% crude quinaldine, b.  $213-8^\circ$ ,  $n_D^{20}$  1.58920,  $d_4^{25}$  1.0302, and 7% 2,4-dimethylquinoline, b.  $250-67^\circ$ ,  $n_D^{20}$  1.59980,  $d_4^{25}$  1.0500; the former gave the picrate, m.  $190^\circ$ , and the Hg salt (P), m.  $165^\circ$ , while the latter gave the picrate, m.  $192^\circ$ . If the heating of the initial mixt. is extended to 15-20 hrs., no quinaldine is obtained and the yield of 2,4-dimethylquinoline, b.  $290-70^\circ$ , rises to 25-25.2%; longer heating lowers the yield. If, after 10 hrs. of heating, the mixt. is subjected to slow distn. (2 hrs.) of the resulting  $\text{H}_2\text{O}$  (total distillate, 25 ml.), and reheated 5-6 hrs. with 10 ml. addnl.  $\text{Me}_2\text{CO}$ , a 30.2% yield is obtained. The latter procedure gave, from 17.9 g.  $p\text{-MeC}_6\text{H}_4\text{NH}_2$ , 11.5 g.  $p\text{-MeC}_6\text{H}_4\text{NO}_2$ , 50 g.  $(\text{CH}_3\text{OH})_2$ , 34 ml.  $\text{H}_2\text{SO}_4$ , and 20 ml.  $\text{Me}_2\text{CO}$  (10 ml. added after the distn. step), 28% 2,4,6-trimethylquinoline, m.  $38^\circ$ ; picrate, m.  $202^\circ$ ;  $\text{HgCl}_2$  salt, m.  $155^\circ$ . The o-analog gave 2,4,8-trimethylquinoline (10%), b.  $275-82^\circ$ ; picrate, m.  $190^\circ$ ;  $\text{HgCl}_2$  salt, m.  $233^\circ$ . If  $(\text{CH}_3\text{OH})_2$  is omitted in the prepn. of 2,4-dimethylquinoline (1st expt. above), the yield drops to

0.5%; if  $\text{PhNH}_2$  is omitted, 10 hrs. refluxing gives but 1 g. products, b.  $70-125^\circ$ , thus disproving Haeyer's theory [*J. prakt. Chem.* 33, 398 (1880)] of the initial formation of  $\text{AcCH}_2\text{CH}(\text{OH})\text{Me}$  from  $\text{AcH}$  and  $\text{Me}_2\text{CO}$ . Heating 10 g. quinaldine with 30 g.  $(\text{CH}_3\text{OH})_2$ , 15 g.  $\text{Me}_2\text{CO}$ , and 30 ml.  $\text{H}_2\text{SO}_4$ , 20 hrs. to  $140-5^\circ$  gave 0.5 g. unchanged quinaldine, some 2.5 g. tar, and but 10% of a condensation product with  $\text{AcH}$  and  $\text{Me}_2\text{CO}$  (not investigated). The procedure for 2,4-dimethylquinoline applied to a reaction mixt. contg.  $\text{MeEtCO}$  instead of  $\text{Me}_2\text{CO}$  gave 16.2% 2-methyl-4-ethylquinoline, m.  $108^\circ$  (tartrate, m.  $155^\circ$ ; picrate, m.  $219^\circ$ ); the product of Bähr (C.A. 17, 92) was apparently quite impure; the base forms a chloroplatinate hydrate, m.  $278^\circ$ , which forms a dihydrate; the dihydrate forms yellow needles (from  $\text{H}_2\text{O}$ ). The mother liquor from the prepn. yields a small amt. of 2,3,4-trimethylquinoline, b.  $262-7^\circ$ ; picrate, m.  $192^\circ$ ; chloroplatinate, m.  $215^\circ$ .

G. M. Kosolow

Bv. ab.

G11-6 Heterocyclic

Derivatives of quinoline. VI. Total condensation of aromatic amines, 1 : 2-propylene glycol, and oxides. B. I. Ardashov (with T. P. Myrna) (*Izv. Akad. Nauk. USSR, 1950, 20, 402-404* [U.S. transl., 401-405]; cf. A., 1950, II, 900).—3-Methyl-, 3 : 6-dimethyl-, and 3 : 6-dimethyl-8-ethylquinoline are synthesized from  $\text{NH}_2\text{Ph}$ , *p*- and *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NH}_2$ , respectively, with propane-1 : 2-diol in  $\text{H}_2\text{SO}_4$  in a Shirap reaction with better yields than are attainable by the Doebner-Miller method, using aromatic amines and  $\text{EtCHO}$ . 4-Methyl-, 4 : 6-dimethyl-, and 4 : 6-dimethyl-8-ethylquinoline are synthesized from  $\text{NH}_2\text{Ph}$ , *p*- and *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NH}_2$ , respectively, with propane-1 : 2-diol, and  $\text{COMe}$ , in  $\text{H}_2\text{SO}_4$  with higher yields than in syntheses in which  $\text{COMe}$  is not present. The synthesis of alkylated quinolines from aromatic amines, with or without participation of ketones, appears to be generally applicable to primary-secondary  $\alpha$ -glycols.

Propane-1 : 2-diol (I), b.p.  $188-190^\circ$ , is obtained by the action of powdered  $\text{NaOH}$  on glycerol and is twice distilled before use.  $\text{NH}_2\text{Ph}$ , *p*- and *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NH}_2$ , and I in  $\text{H}_2\text{SO}_4$  with  $\text{PhNO}_2$ , *p*- and *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NO}_2$ , as oxidants afford, respectively, 3-methyl- (47-4%), 3 : 6-dimethyl- (28%), and 3 : 6-dimethyl-8-ethylquinoline (30-5%). Degradation of  $\text{COMe}$  to a mixture of freshly distilled  $\text{NH}_2\text{Ph}$ , propane-1 : 2-diol,  $\text{PhNO}_2$  and conc.  $\text{H}_2\text{SO}_4$ , heating the mixture to gentle boiling for 10 hr., driving off the  $\text{H}_2\text{O}$  (with suspended  $\text{COMe}$ , and some  $\text{PhNO}_2$ ), adding more  $\text{COMe}$ , and heating the mixture for another 7 hr., cooling and working up as in the Shirap reaction, gives 4-methyl-8-ethylquinoline, b.p.  $276-278^\circ$ ,  $d_{20}^{20} 1.027$ ,  $n_D^{20} 1.5841$  (lit.,  $d_{20}^{20} 1.027$ ,  $n_D^{20} 1.5841$ ).  $\text{C}_{17}\text{H}_{19}\text{N}$ ,  $\text{C}_{17}\text{H}_{19}\text{O}_2\text{N}$ , m.p.  $180^\circ$ ; platinumchloride ( $\text{C}_{17}\text{H}_{19}\text{N}(\text{HCl})\text{PtCl}_6$ , m.p.  $219^\circ$ ; platinumchloride ( $\text{C}_{17}\text{H}_{19}\text{N}(\text{HCl})\text{PtCl}_6$ , m.p.  $240^\circ$ ). The quinophthalone base has m.p.  $>300^\circ$ . When treated with 25% alkali and isolated as Na salt of carboxylic acids, it dyes wool and silk light brown. Analogously, *p*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NH}_2$ , I, and  $\text{COMe}$ , in  $\text{H}_2\text{SO}_4$ , using *p*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NO}_2$  as oxidant furnish 4 : 6-dimethyl-8-ethylquinoline (25-7%), b.p.  $288-290^\circ$ ,  $d_{20}^{20} 1.0238$ ,  $n_D^{20} 1.5820$  (lit.,  $d_{20}^{20} 1.0238$ ,  $n_D^{20} 1.5820$ ).  $\text{C}_{19}\text{H}_{21}\text{N}$ ,  $\text{C}_{19}\text{H}_{21}\text{O}_2\text{N}$ , m.p.  $190^\circ$ ; platinumchloride ( $\text{C}_{19}\text{H}_{21}\text{N}(\text{HCl})\text{PtCl}_6$ , m.p.  $260^\circ$ ). Similarly, *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NH}_2$ , I, and  $\text{COMe}$ , in  $\text{H}_2\text{SO}_4$  with *o*- $\text{C}_6\text{H}_4\text{Me}\cdot\text{NO}_2$  as oxidant afford 4 : 6-dimethyl-8-ethylquinoline (25-7%), b.p.  $276-280^\circ$ ,  $d_{20}^{20} 1.0011$ ,  $n_D^{20} 1.5649$  (lit.,  $d_{20}^{20} 1.0011$ ,  $n_D^{20} 1.5649$ ).  $\text{C}_{17}\text{H}_{19}\text{N}$ ,  $\text{C}_{17}\text{H}_{19}\text{O}_2\text{N}$ , m.p.  $147^\circ$ ; platinumchloride, ( $\text{C}_{17}\text{H}_{19}\text{N}(\text{HCl})\text{PtCl}_6$ , m.p.  $217^\circ$ ). H. WREN.

BA

Reactions of  $\beta$ -unsaturated aldehydes with aromatic amines. VII. Diphenylamineacrolein [1:3-bis(diphenylamino)prop-2-ene]. E. I. Artyukov (with M. M. Kurbatov) [J. gen. Chem. USSR, 1960, 30, 686-688 (U.S. transl. 497-499)].—The product of the reaction between  $\text{CH}_3\text{CH}=\text{CHCHO}$  and  $\text{NHPH}_2$  is not allylidenebis(diphenylamine),  $\text{CH}_3\text{CH}=\text{CH}(\text{NPH}_2)_2$ , as described by Lende (Ber., 1902, 18, 1189) but 1:3-bis(diphenylamino)prop-2-ene. The reaction is formulated as:  $\text{NHPH}_2 + \text{CH}_3\text{CH}=\text{CHCHO} \rightarrow \text{NPH}_2\text{CH}_2\text{CH}(\text{CH}_2\text{NPH}_2)\text{CH}=\text{CHOH}$ ;  $\text{NHPH}_2 + \text{NPH}_2\text{CH}_2\text{CH}(\text{CH}_2\text{NPH}_2)\text{CH}=\text{CHOH} \rightarrow \text{NPH}_2\text{CH}_2\text{CH}(\text{CH}_2\text{NPH}_2)\text{CH}=\text{CHNPH}_2 + \text{H}_2\text{O}$ . Other members of the series of *tert.* aliphatic-aromatic amines may be synthesized analogously. The mechanism of the hydrolytic and thermal decomposition of diphenylamineacrolein justifies the conclusion that it is impossible to synthesize quinoline deriv. from *sec.* aromatic amines in the Skraup or Doebner-Miller reactions.

Contrary to Lende (*loc. cit.*), heating  $\text{NHPH}_2$  and  $\text{CH}_3\text{CH}=\text{CHCHO}$  in  $\text{EtOH}$  at 60–65° for 12 hr. gives a compound, m.p. 106–118°, in 8–10% yield. When heating is continued for more than 18 hr., the mixture turns red, apparently due to atm. oxidation. Addition of a drop of  $\text{HCl}$  causes an energetic change resulting in polymerization.  $\text{NHPH}_2$  and  $\text{CH}_3\text{CH}=\text{CHCHO}$  must be used in equiv. proportions or, better, using a slight excess of aldehyde. The reactants are heated for 8–10 hr. on a boiling water-bath in a flask closed with a solid rubber stopper, fastened with wire and cemented on the top with lead putty. The flask is then placed for 4 hr. on ice and then treated with  $\text{EtOH}$  whereupon "diphenylamineacrolein" [1:3-bis(diphenylamino)prop-2-ene],  $\text{C}_{27}\text{H}_{29}\text{N}_3$  (83.7%), m.p. 148°, separates. It gives a cherry-red solution in  $\text{H}_2\text{SO}_4$ . When heated at 270°/20 mm., it gives  $\text{NHPH}_2$  and a tarry residue smelling of  $\text{CH}_3\text{CH}=\text{CHCHO}$ , thus indicating the formation of diphenylamineacrolein, which polymerizes to a tar. H. WERN.

CA.

Researches on the derivatives of quinoline. VI. Joint  
condensation of aromatic amines, 1,2-propylene glycol, and  
acetone. B. I. Ardashiev (V. M. Molotov State Univ.,  
Rostov-on-Don). *J. Gen. Chem. U.S.S.R.* 20, 401-5  
(1950) (Engl. translation). See *C.A.B.* 44, 7817d. R. M. S.

1957

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The reactions of  $\alpha,\beta$ -unsaturated aldehydes with aromatic amines. III. Diphenylamineacrolein. II. I. Ardashov and M. M. Kurbatov (V. M. Molotov State Univ., Rostov-on-Don). *J. Gen. Chem. U.S.S.R.* 20, 497-9 (1950) (Engl. translation).—See *C.A.* 44, 7803i. R. M. S.

1957

JARDASHEV, B. I.

Quinoline derivatives: VIII. Synthesis of substantive quinophthalonic dyes from diamines of biphenyl series. B. I. Jardashev and Z. V. Maling (V. M. Molotov State Univ., Rostov). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 1349-54 (1951); cf. *Uchenye Zapiski Rostovskogo Gosudarst. Univ.* 5, (1951); *C.A.* 44, 7847a.—Satn. of 30 ml. paraldehyde in 30 ml. ice-cooled Me<sub>2</sub>CO with dry HCl, letting stand 1 day, addn. of the mixt. to 12.3 g. benzidine and 30 ml. concd. HCl, refluxing 5 hrs., letting the mixt. stand overnight, dilg. with 50 ml. H<sub>2</sub>O, refluxing briefly, filtering hot, and cooling gave 28% 2,2',4,4'-tetramethyl-6,6'-biquinoline, m. 232° (from EtOH). If the HCl stream is maintained during the heating period, 31% of a purer crude product is obtained. Similarly, [3,4-MeO(H,N)C<sub>6</sub>H<sub>3</sub>]<sub>2</sub> gave 18% 2,2',4,4'-tetramethyl-8,8'-dimethoxybiquinoline, m. 195° (from EtOH), while tolidine gave by this method 4% 2,2',4,4',8,8'-hexamethyl-6,6'-biquinoline, m. 225°; purification by means of *o*-C<sub>6</sub>H<sub>4</sub>(CO)<sub>2</sub>O (Russ. patent 47,207, *C.A.* 33, 3400) permitted the isolation of 51% yield of the substance, m. 220° (after washing with EtOH). From these

intermediates the prepn. of biquinophthalones were obtained in 75%, 60%, and 83% yields, resp., by the method of Porai-Koshits and Kulikov (*C.A.* 32, 1458). All were brown powders, which did m. 360°, partly subliming at high temp. Their sulfonation proceeds in 95% yields and they are substantive dyes, in which the introduction of Me or MeO groups deepens the color shade; the benzidine deriv. dyes deep yellow, tolidine orange-yellow, dianisidine orange. G. M. Kosolapoff.



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Acetylation of aromatic amines with acetyl chloride in the presence of sodium acetate. B. J. Ardashov and E. S. Rysh (V. M. Molotov Univ., Rostov). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 1503-5 (1951). Acetylation of  $ArNH_2$  with  $AcCl$  and  $NaOAc$  tried on 12 amines ( $PhNH_2$ , *o*-, *m*-, and *p*-toluidines, 1- and 2- $C_6H_4NH_2$ , *m*-xylydine, *o*- and *p*-anisidine, *m*- and *p*- $C_6H_4NH_2$ , and benzidine) gave the best yields of pure products without further crystn. in comparison with other methods of acetylation. Typical expt.: 18.0 g.  $PhNH_2$  and 8 g. freshly fused  $NaOAc$  were treated with shaking with 17 g.  $AcCl$ ; after the mixt. had cooled, diln. with 5 vols.  $H_2O$  and filtration gave directly 96%  $AcNHPh$ . m. 114°. G. M. Kosolapoff

1952

CR

13

The acetylation of aromatic amines with acetyl chloride in the presence of sodium acetate. B. I. Ardashev and E. S. Bych. *J. Gen. Chem. U.S.S.R.* 21, 1643-4 (1951) (Engl. translation).—See *C.A.* 40, 3013a. B. R.

CA

10

The reaction of some anils with maleic anhydride. H. I.  
[Ardashev and Z. D. Markova. *J. Gen. Chem. U.S.S.R.* 21,  
1015 7(1961) (Engl. translation) - See C.A. 46, 5405g  
H. R.

ARDASHEV, B. I.

CATALYST

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*Chem*

Quinoline derivatives. IX. Mechanism of Pictet reaction. B. I. Ardashov and B. A. Terlov. *M. Molotov State Univ., Rostov. Zhur. Obshchei Khim.* 22, 2200-3 (1952); cf. *C.A.* 41, 122d; 47, 2761b. Heating alkylated acylanilines or acylated *o*-toluidines with  $ZnCl_2$  leads to  $\alpha$ - and  $\beta$ -substituted quinolines. The accepted mechanism of the Pictet reaction indicates the impossibility of obtaining  $\gamma$ -alkylated quinolines by this method; the scheme proposed involving the formation of 2-alkylindoles which then undergo ring expansion to form the quinolines. Heating 15 g. *N*-methylacetanilide and 15 g.  $ZnCl_2$  6 hrs. at 290-300°, soln. of cooled product in HCl, treatment with 40% NaOH, steam distn. and treatment of the crude bases with  $Ac_2O$ , gave an unstated yield of quinoline, isolated as picrate, m. 198°; also prepd. from 15 g. *N*-acetyl-*o*-toluidide and 15 g.  $ZnCl_2$  after 6 hrs. at 290-300°, and from 15 ml.  $PhNHNH_2$  and 15 ml.  $Me_2CO$  heated to 100° 1 hr., then to 290-300° with 25 g.  $ZnCl_2$  for 3 hrs. Heating 15 g. *N*-ethylacetanilide and 15 g.  $ZnCl_2$  4 hrs. to 260-70° gave quinaldine, isolated as picrate, m. 190°; styphnate, m. 211°;  $PhNHNH_2$  (15 ml.) and 20 ml.  $EtMeCO$  and 25 g.  $ZnCl_2$  also gave quinaldine (picrate, m. 190°). Similarly *N*-propionyl-*o*-toluidine or *N*-methylpropionylaniline with  $ZnCl_2$  gave *3*-methylquinoline (picrate, m. 188°; styphnate, m. 183°).  
G. M. Kosolapoff

ARDASHEV, B. I.

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② Chem  
Quinoline derivatives. IX. Mechanism of Pictet reaction. B. I. Ardashev and B. A. Vertov. J. Gen. Chem. U.S.S.R. 22, 2257-9 (1952) (Engl. translation).—See C.A. 48, 1360c. H. L. W.

ARDASHEV, B. I.

Syntheses of quinolines from diethylidenearyl amines and from diene anils. B. I. Ardashov, *Doklady Akad. Nauk S.S.S.R.* 92, 1176-8 (1953). It is pointed out that under the conditions described by Zaluksay (*Latvijas PSR Zinatnu Akad.* 1, 131 (1951)) it is possible to obtain only 25-30% yields of quinaldine, instead of the reported 51%. Formation of quinaldine and its derivs. from HCl salts of  $ArNHCHMeCH_2CH(NHAr)$ , (I) gives 80-93% yields;  $PhNH_2 \cdot HCl$  exerts a catalytic action and the best yields are obtained when an equimolar amt. of amine HCl salt is used. The reaction can be run in EtOH soln. with  $FeCl_3$  as the oxidizing agent. From corresponding I there can be obtained 87% 8-polyquinaldine and 90% 6-nitroquinaldine. In formation of phenylquinolines from  $PhN:CHCH:CHPh$ , and its analogs, the max. yields results from the use of 2 moles excess amine, the reaction proceeding by addn. of 2 moles of the amine at the 2 double bonds, the product then expelling 2 moles of the amine, H and forming the phenylquinoline. Addn. of an oxidizing agent aids the yield. A poor (10%) yield of 2-phenylquinoline from cinnamaldehyde and  $PhNH_2$  is caused by decompn. of anil and formation of polymerization products. The mixture of cinnamaldehyde treated with  $PhNH_2$  yielded 2-phenylquinoline. At high temp. in weakly basic medium the cyclization of dienic anils yields  $\gamma$ -substituted quinolines, since the intermediates cited above do not form. To 3 g. dimeric ethylideneaniline (m. 117°) was added 3 ml. concd.  $HCl$ , 3 ml.  $H_2O$  and 1.5 g.  $PhNH_2 \cdot HCl$  and the mixture was heated 3 hrs. on a steam bath; treatment with  $NaOH$ , steam distn. and addn. of picric acid to the distillate gave 80% quinaldine picrate, m. 190°. To 40 g. 98%  $H_2PO_4$ , 14 g.  $p-MeC_6H_4NH_2$ , and 7 g.  $p-O_2NC_6H_4Me$  kept at 150° was added over 10-15 min. 14 g. cinnamylidene- $p$ -toluidine anil, heated 1 hr. at 150-60° and 1 hr. at 160-70°; heating with dil.  $HCl$  and steam distn. gave after usual treatment 47% 7-methyl-4-phenylquinoline, b. 300-40°; picrate, m. 207°. Passage of 5 g.  $N$ -cinnamylideneaniline over  $Al_2O_3$  in a Cu tube kept at 400-50° gave  $\gamma$ -phenylquinoline; picrate, m. 225°.

G. M. Kosolapoff

Ardashev, B. I.

The mechanism of synthesis of quinolines. B. I. Ardashev. *Uspokhi Khim* 23, 45-61 (1964). - Review with references in which it is pointed out that in the Doebner-Miller synthesis the main course of reaction is the formation of dimers of ethyldenearyl amine, which then yield the quinoline bases in good yields. The Doebner-Miller synthesis can be employed for quinoline synthesis from diamines and secondary amines. The Skraup synthesis undoubtedly proceeds by direct cyclization of acrokin anil, derived from glycerol or its analogs. The addn. of the amino group to the un-std. link of the acrokin-type unit as a 1st step in the reaction is held to be untenable. G. M. Kozlov

U S S R .

Quinoline derivatives. X. Syntheses of quinolines from  
bis(ethylbenzylamine). B. I. Andrushev. *J. Gen. Chem.*  
*U.S.S.R.* 24, 127-9 (1954) (*Russ. Chem. Rev.*).—See C.A.  
49, 3191d. H. L. H.



ARDASHEV, B. I.

USSR/Chemistry - Synthesis

Card 1/1 Pub. 151 - 24/36

Authors : Ardashev, B. I.

Title : Quinoline derivatives. Part 10.- Synthesis of quinoline from diethylidenearylamines

Periodical : Zhur. ob. khim. 24/1, 131-133, Jan 1954

Abstract : The derivation of quinaldine and its substitutes (yields 80-90%) from diethylidenearylamines in an acid medium as well as in an alcohol solution in the presence of ferric chloride as the oxidizing agent is explained. The catalytic effect of aniline chloride on the yield of quinaldine and its derivatives is discussed. It was found that the new method applied in the synthesis of quinaldine derivatives from diethylidenearylamines is well suitable for the derivation of quinaldine derivatives from o-substituted amines, nitroamines and for the synthesis of various quinaldine derivatives obtained in low yields by means of other methods. Twelve references: 7-USSR; 3-German and 2-French (1892-1951).

Institution: The V. M. Molotov State University, Rostov

Submitted : September 4, 1953

ARDASHEV, B. I.

USER/Chemistry - Synthesis

Card 1/1 Pub. 151 - 25/38

Authors : Ardashev, B. I., and Tertov, B. A.

Title : Investigation of quinoline derivatives. Part 11.- Synthesis of lepidine and its derivatives from acetylated aryl amines

Periodical : Zhur. ob. khim. 24/2, 314-317, Feb 1954

Abstract : The synthesis of lepidine, 6-methyllepidine and a hitherto unknown 4,8-dimethyllepidine from acetylated aromatic amines, formaldehyde and acetone, in an alcohol solution in the presence of ferric chloride, is described. The newly developed method for the synthesis of lepidine and its derivatives was found to require comparatively little time (4 - 5 hrs) and is therefore recommended as a preparative method for the derivation of above mentioned substances. The effect of amine salt addition to the reaction mixture on the yields of lepidine products is explained. Nine references: 7-USSR; 1-USA and 1-German (1886-1954).

Institution : The V. M. Molotov State University, Rostov

Submitted : September 4, 1953

ARDASHEV, B. I.

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ANDERSON, B.I., TARTON, B.A. ...

the filtrate treated with phthalic anhydride gave 5.5 g. of  
dimethyl-4,4'-bisphthalate.  $\text{C}_{20}\text{H}_{16}\text{O}_6$  mp. 100-101°C.  $\text{C}_{20}\text{H}_{16}\text{O}_6$   
100-101°C.  $\text{C}_{20}\text{H}_{16}\text{O}_6$  100-101°C.  $\text{C}_{20}\text{H}_{16}\text{O}_6$  100-101°C.

brown solids, which are soluble in concentrated bases with  
a trace of yellow discoloration. The insoluble material obtained  
after removal of the soluble portion was dried in a vacuum oven  
and melted at 160°C. The infrared spectrum of the solid obtained  
above gave  $\nu_{\text{max}}$  1715 cm<sup>-1</sup> with HCl heating 5 hrs. as  
fine m. 250°C. Its  $^1\text{H}$  NMR spectrum,  $\text{CDCl}_3$ ,  $\delta$  1.4 (singlet,  
m 2H), 2.0 (s, 3H), 2.2 (s, 4H), 2.4 (s, 2H), 2.6 (s, 2H), 2.8 (s, 2H), 3.0 (s, 2H), 3.2 (s, 2H), 3.4 (s, 2H), 3.6 (s, 2H), 3.8 (s, 2H), 4.0 (s, 2H), 4.2 (s, 2H), 4.4 (s, 2H), 4.6 (s, 2H), 4.8 (s, 2H), 5.0 (s, 2H), 5.2 (s, 2H), 5.4 (s, 2H), 5.6 (s, 2H), 5.8 (s, 2H), 6.0 (s, 2H), 6.2 (s, 2H), 6.4 (s, 2H), 6.6 (s, 2H), 6.8 (s, 2H), 7.0 (s, 2H), 7.2 (s, 2H), 7.4 (s, 2H), 7.6 (s, 2H), 7.8 (s, 2H), 8.0 (s, 2H), 8.2 (s, 2H), 8.4 (s, 2H), 8.6 (s, 2H), 8.8 (s, 2H), 9.0 (s, 2H), 9.2 (s, 2H), 9.4 (s, 2H), 9.6 (s, 2H), 9.8 (s, 2H), 10.0 (s, 2H), 10.2 (s, 2H), 10.4 (s, 2H), 10.6 (s, 2H), 10.8 (s, 2H), 11.0 (s, 2H), 11.2 (s, 2H), 11.4 (s, 2H), 11.6 (s, 2H), 11.8 (s, 2H), 12.0 (s, 2H), 12.2 (s, 2H), 12.4 (s, 2H), 12.6 (s, 2H), 12.8 (s, 2H), 13.0 (s, 2H), 13.2 (s, 2H), 13.4 (s, 2H), 13.6 (s, 2H), 13.8 (s, 2H), 14.0 (s, 2H), 14.2 (s, 2H), 14.4 (s, 2H), 14.6 (s, 2H), 14.8 (s, 2H), 15.0 (s, 2H), 15.2 (s, 2H), 15.4 (s, 2H), 15.6 (s, 2H), 15.8 (s, 2H), 16.0 (s, 2H), 16.2 (s, 2H), 16.4 (s, 2H), 16.6 (s, 2H), 16.8 (s, 2H), 17.0 (s, 2H), 17.2 (s, 2H), 17.4 (s, 2H), 17.6 (s, 2H), 17.8 (s, 2H), 18.0 (s, 2H), 18.2 (s, 2H), 18.4 (s, 2H), 18.6 (s, 2H), 18.8 (s, 2H), 19.0 (s, 2H), 19.2 (s, 2H), 19.4 (s, 2H), 19.6 (s, 2H), 19.8 (s, 2H), 20.0 (s, 2H), 20.2 (s, 2H), 20.4 (s, 2H), 20.6 (s, 2H), 20.8 (s, 2H), 21.0 (s, 2H), 21.2 (s, 2H), 21.4 (s, 2H), 21.6 (s, 2H), 21.8 (s, 2H), 22.0 (s, 2H), 22.2 (s, 2H), 22.4 (s, 2H), 22.6 (s, 2H), 22.8 (s, 2H), 23.0 (s, 2H), 23.2 (s, 2H), 23.4 (s, 2H), 23.6 (s, 2H), 23.8 (s, 2H), 24.0 (s, 2H), 24.2 (s, 2H), 24.4 (s, 2H), 24.6 (s, 2H), 24.8 (s, 2H), 25.0 (s, 2H), 25.2 (s, 2H), 25.4 (s, 2H), 25.6 (s, 2H), 25.8 (s, 2H), 26.0 (s, 2H), 26.2 (s, 2H), 26.4 (s, 2H), 26.6 (s, 2H), 26.8 (s, 2H), 27.0 (s, 2H), 27.2 (s, 2H), 27.4 (s, 2H), 27.6 (s, 2H), 27.8 (s, 2H), 28.0 (s, 2H), 28.2 (s, 2H), 28.4 (s, 2H), 28.6 (s, 2H), 28.8 (s, 2H), 29.0 (s, 2H), 29.2 (s, 2H), 29.4 (s, 2H), 29.6 (s, 2H), 29.8 (s, 2H), 30.0 (s, 2H), 30.2 (s, 2H), 30.4 (s, 2H), 30.6 (s, 2H), 30.8 (s, 2H), 31.0 (s, 2H), 31.2 (s, 2H), 31.4 (s, 2H), 31.6 (s, 2H), 31.8 (s, 2H), 32.0 (s, 2H), 32.2 (s, 2H), 32.4 (s, 2H), 32.6 (s, 2H), 32.8 (s, 2H), 33.0 (s, 2H), 33.2 (s, 2H), 33.4 (s, 2H), 33.6 (s, 2H), 33.8 (s, 2H), 34.0 (s, 2H), 34.2 (s, 2H), 34.4 (s, 2H), 34.6 (s, 2H), 34.8 (s, 2H), 35.0 (s, 2H), 35.2 (s, 2H), 35.4 (s, 2H), 35.6 (s, 2H), 35.8 (s, 2H), 36.0 (s, 2H), 36.2 (s, 2H), 36.4 (s, 2H), 36.6 (s, 2H), 36.8 (s, 2H), 37.0 (s, 2H), 37.2 (s, 2H), 37.4 (s, 2H), 37.6 (s, 2H), 37.8 (s, 2H), 38.0 (s, 2H), 38.2 (s, 2H), 38.4 (s, 2H), 38.6 (s, 2H), 38.8 (s, 2H), 39.0 (s, 2H), 39.2 (s, 2H), 39.4 (s, 2H), 39.6 (s, 2H), 39.8 (s, 2H), 40.0 (s, 2H), 40.2 (s, 2H), 40.4 (s, 2H), 40.6 (s, 2H), 40.8 (s, 2H), 41.0 (s, 2H), 41.2 (s, 2H), 41.4 (s, 2H), 41.6 (s, 2H), 41.8 (s, 2H), 42.0 (s, 2H), 42.2 (s, 2H), 42.4 (s, 2H), 42.6 (s, 2H), 42.8 (s, 2H), 43.0 (s, 2H), 43.2 (s, 2H), 43.4 (s, 2H), 43.6 (s, 2H), 43.8 (s, 2H), 44.0 (s, 2H), 44.2 (s, 2H), 44.4 (s, 2H), 44.6 (s, 2H), 44.8 (s, 2H), 45.0 (s, 2H), 45.2 (s, 2H), 45.4 (s, 2H), 45.6 (s, 2H), 45.8 (s, 2H), 46.0 (s, 2H), 46.2 (s, 2H), 46.4 (s, 2H), 46.6 (s, 2H), 46.8 (s, 2H), 47.0 (s, 2H), 47.2 (s, 2H), 47.4 (s, 2H), 47.6 (s, 2H), 47.8 (s, 2H), 48.0 (s, 2H), 48.2 (s, 2H), 48.4 (s, 2H), 48.6 (s, 2H), 48.8 (s, 2H), 49.0 (s, 2H), 49.2 (s, 2H), 49.4 (s, 2H), 49.6 (s, 2H), 49.8 (s, 2H), 50.0 (s, 2H), 50.2 (s, 2H), 50.4 (s, 2H), 50.6 (s, 2H), 50.8 (s, 2H), 51.0 (s, 2H), 51.2 (s, 2H), 51.4 (s, 2H), 51.6 (s, 2H), 51.8 (s, 2H), 52.0 (s, 2H), 52.2 (s, 2H), 52.4 (s, 2H), 52.6 (s, 2H), 52.8 (s, 2H), 53.0 (s, 2H), 53.2 (s, 2H), 53.4 (s, 2H), 53.6 (s, 2H), 53.8 (s, 2H), 54.0 (s, 2H), 54.2 (s, 2H), 54.4 (s, 2H), 54.6 (s, 2H), 54.8 (s, 2H), 55.0 (s, 2H), 55.2 (s, 2H), 55.4 (s, 2H), 55.6 (s, 2H), 55.8 (s, 2H), 56.0 (s, 2H), 56.2 (s, 2H), 56.4 (s, 2H), 56.6 (s, 2H), 56.8 (s, 2H), 57.0 (s, 2H), 57.2 (s, 2H), 57.4 (s, 2H), 57.6 (s, 2H), 57.8 (s, 2H), 58.0 (s, 2H), 58.2 (s, 2H), 58.4 (s, 2H), 58.6 (s, 2H), 58.8 (s, 2H), 59.0 (s, 2H), 59.2 (s, 2H), 59.4 (s, 2H), 59.6 (s, 2H), 59.8 (s, 2H), 60.0 (s, 2H), 60.2 (s, 2H), 60.4 (s, 2H), 60.6 (s, 2H), 60.8 (s, 2H), 61.0 (s, 2H), 61.2 (s, 2H), 61.4 (s, 2H), 61.6 (s, 2H), 61.8 (s, 2H), 62.0 (s, 2H), 62.2 (s, 2H), 62.4 (s, 2H), 62.6 (s, 2H), 62.8 (s, 2H), 63.0 (s, 2H), 63.2 (s, 2H), 63.4 (s, 2H), 63.6 (s, 2H), 63.8 (s, 2H), 64.0 (s, 2H), 64.2 (s, 2H), 64.4 (s, 2H), 64.6 (s, 2H), 64.8 (s, 2H), 65.0 (s, 2H), 65.2 (s, 2H), 65.4 (s, 2H), 65.6 (s, 2H), 65.8 (s, 2H), 66.0 (s, 2H), 66.2 (s, 2H), 66.4 (s, 2H), 66.6 (s, 2H), 66.8 (s, 2H), 67.0 (s, 2H), 67.2 (s, 2H), 67.4 (s, 2H), 67.6 (s, 2H), 67.8 (s, 2H), 68.0 (s, 2H), 68.2

3/2

ARDASHEV, B.I.; KOZLENKO, Yu.M.

Research in the field of quinoline and of its derivatives. Part  
13. Synthesis of quinoline bases from diamines of the diphenyl  
series. Zhur.ob.khim. 26 no.2:498-500 F '56. (MLRA 9:8)

1. Rostovskiy gosudarstvennyy universitet.  
(Quinoline) (Amines)

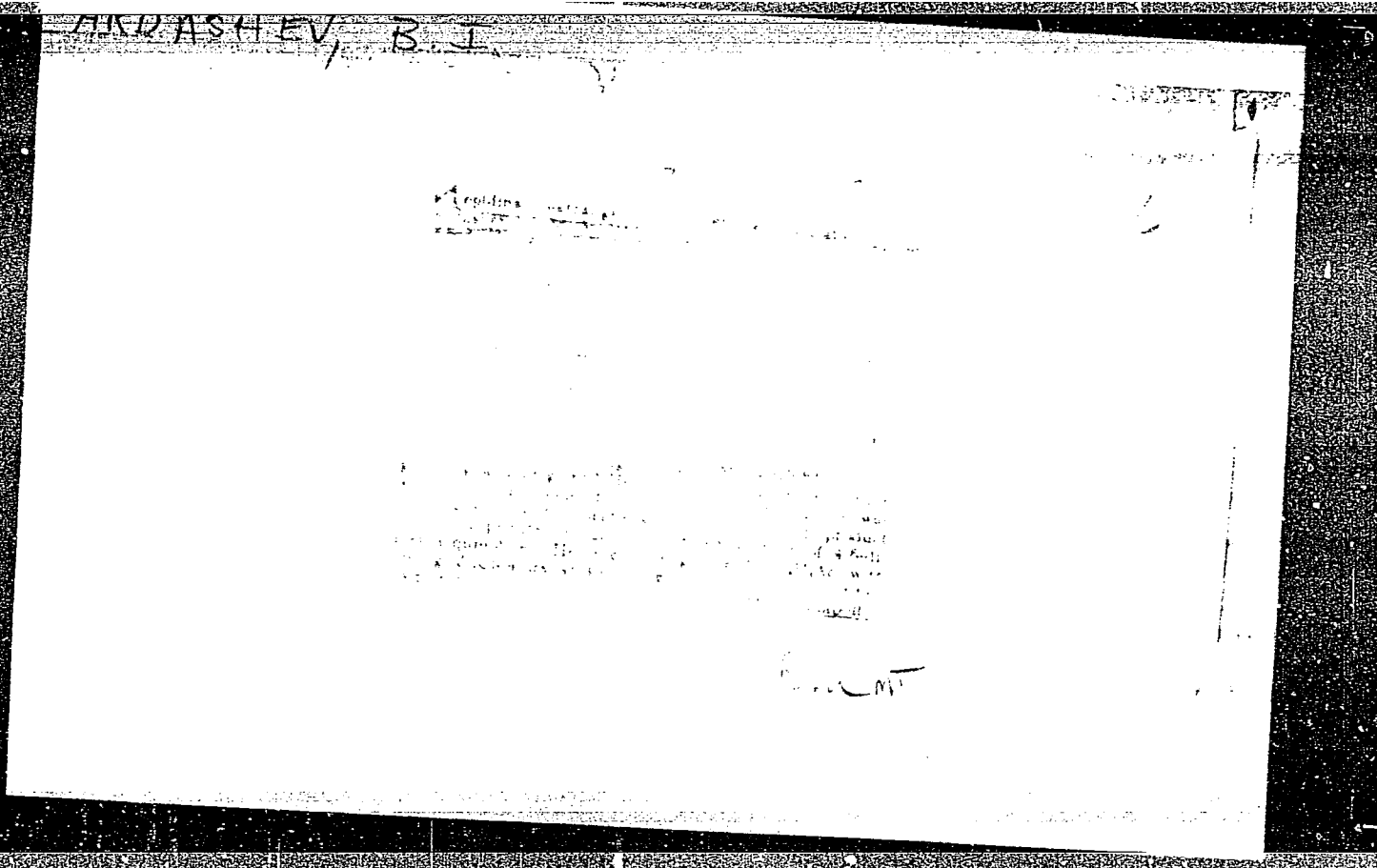
*Handwritten text, possibly "12-10-68" or similar.*

*Faint, illegible text, possibly a signature or stamp.*



*Andashev BT*

*7*  
-Vipidine rearrangement of ethylacetanilides. II. *2*  
Andashev. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 110,  
597-5 (1959) (English translation).—See C.A. 51, 8095d.  
D. M. R.  
*m* *1/4 4j*



**"APPROVED FOR RELEASE: 06/05/2000**

**CIA-RDP86-00513R000101920016-1**

**APPROVED FOR RELEASE: 06/05/2000**

**CIA-RDP86-00513R000101920016-1"**

*ARDASHEV, B. I.*

AUTHORS: Tertov, B. A., Ardashev, B. I.

79-11-25/56

TITLE: Synthesis of the Lepidine-Bases From Arylamines and Carbonyl Compounds (Sintez lepidinovykh osnovaniy iz arilaminov i karbonil'nykh soedineniy).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3026-3028 (USSR)

ABSTRACT: Bayer's (Beyera) synthesis of lepidine from aniline, formaldehyde and acetone belongs to the organic processes which consist of many and partially very rapidly progressing side reactions. Pictet and Wisner tried the same conversion with arylamines and obtained lepidine and its homologues only in a small yield of 3-5% of theory. By further tests this yield was not significantly increased. After analyzing the most important direction of reaction (formation of butanon-aniline) and a number of side directions the authors came to the conclusion that the reaction should most expediently be carried out with small concentrations of aromatic amine and formaldehyde in the reaction mixture and with a large excess of acetone. The authors found that with arylamines, formaldehyde and acetone in the presence of iron chloride and

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Synthesis of the Lepidine-Bases From Arylamines and  
Carbonyl Compounds

79-11-25/56

zinc chloride the yields of lepidine bases are increased to 15-37%. The method suggested can be employed in the production of considerable quantities of lepidine bases. There are 7 references, 4 of which are Slavic.

ASSOCIATION: Rostov-na-Donu State University (Rostov-na-Donu Gosudarstvennyy universitet).

SUBMITTED: November 9, 1956

AVAILABLE: Library of Congress

1. Lepidines - Synthesis
2. Arylamines - Chemical reactions
3. Carbonyls - Chemical reactions

Card 2/2

A. R. Radashev, B. I.

Quinoline derivatives. XIV Synthesis of lepidine bases  
from acylanilide and oxo compounds. B. A. Terlov, B. I. Radashev and  
C. A. St. 2784a. A. 30  
MeCO. 25.

ALDREY, B. E.

2/11/71  
3

Distr: 4E2c(j)/4E3d/4E4j 7

Synthesis of 6-methoxyquinoline. B. I. Ardashov and V. I. Minkin. *Zhur. Priklad. Khim.* 50, 1977, 1457. cl. C.A. 52, 7319f. — Anisidine, 26 g., 25 ml. 90%  $H_2SO_4$ , and 120 g. glycerol at 95–100° was added gradually (60–90 min.) through a reflux condenser to 22 g. nitroanisole (preheated at 170°, the next day 145°) refluxed 1.5 hrs., cooled to 70–80°, and dild. with 250 ml.  $H_2O$ . It was extd. with excess  $C_6H_6$ , filtered, distd., and dissolved in  $EtO$  (added by 2 portions of 25 and 15 g. phthalic anhydride), yielding 64% 6-methoxyquinoline, b<sub>1</sub> 127–30°, b<sub>2</sub> 279–84°. J.B.

Juf

AUTHORS: Ardashev, B. I. Minkin, V. I., Minkin, M. B. SOV/156-58-3-31/52

TITLE: On the Mechanism of the Transformation of Acylated  
Arylamines (O mekhanizme peregruppirovok atsilirovannykh  
arilaminov)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya  
tekhnologiya, 1958, Nr 3, pp. 526-529 (USSR)

ABSTRACT: The mechanism of the transformation of the acylarylamines  
under the action of catalysts was investigated. This trans-  
formation takes place at higher temperatures in the presence  
of acid catalysts. The reaction of the transformation of  
acetanilide with the catalyst  $ZnCl_2$  in an HCl current was  
experimentally carried out. After heating to  $150-200^\circ$  for  
30 minutes NN'-diphenylacetamide was formed in good yield.  
On a further increase in temperature this compound converts  
to flavaniline. The NN'-diphenylacetamide crystallises in  
the form of white needles; the yield is 76 %. On the addition  
of anhydrous  $ZnCl_2$  and after heating for several hours  
(5 hours) to  $250^\circ C$  in a weak HCl current flavaniline is

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On the Mechanism of the Transformation of

SOV/156-58-3-31/52  
Acylated Arylamines

formed in a yield of about 41 %. There are 18 references,  
4 of which are Soviet.

ASSOCIATION:

**Kafedra** organicheskoy i organicheskoy  
khimii Novochoerkasskogo politekhnicheskogo instituta  
(Chair of Inorganic and Organic Chemistry at the Novochoerkassk  
Polytechnical Institute)

SUBMITTED: February 17, 1958

Card 2/2

5(3)

AUTHORS:

Ardashev, B. I., Minkin, V. I.,  
(Novocherkassk)

SOV/74-28-2-5/5

TITLE:

Regroupings and Migrations of Acyls in the Series of  
Aromatic Amines (Peregruppirovki i migratsii atsilov v ryadu  
aromaticheskikh aminov)

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 2, pp 218-234 (USSR)

ABSTRACT:

In spite of a large number of papers in this field, regroupings of acylated aromatic amines described in this paper have not yet been systematically dealt with in publications. By means of regrouping of acylated arylamines nitrogenous heterocyclic compounds of the quinoline and acridine series, difficultly accessible arylamino ketones and substituted aminoaryl benzoic acids a. o. can be obtained. The regrouping of acetanilide which is accompanied by a shift of the acetyl group toward the aromatic nucleus, was detected by Fischer and Rudolph (Ref 2). The regrouping of acylanilides in the presence of acid catalysts is usually not terminated by the formation of arylamino ketones. This fact is explained by an increased reactivity of the substances formed which readily enter into condensation and cyclization. During reaction in

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Regroupings and Migrations of Acyls in the Series  
of Aromatic Amines

SOV/74-28-2-5/5

glacial acetic acid by the influence of sirupy phosphoric acid aromatic amino ketones in the form of acetyl derivatives can be separated (Ref 13) the latter of which have been formed by reacylating in acetic acid. Due to the volatility of o-arylamino ketones with steam the isomers can be easily divided. O-arylamino ketones are extremely reactive compounds. If subjected to strict conditions of regrouping of acylanilides they can readily transform into different nitrogenous heterocyclic compounds. The investigation of the regrouping mechanism presents great difficulties. Besides, one and the same regrouping may take place according to various mechanisms which is conditioned by the used catalyst. In this case all regroupings of acylanilides may be divided into three kinds: 1) regrouping with  $AlCl_3$ ; 2) regroupings with phosphoric acids; 3) regroupings with  $ZnCl_2$ . Nevertheless the regrouping mechanism is insufficiently investigated and requires further investigations. The regrouping of alkylacylanilides taking place in polar solvents and in the presence of ionizing catalysts is probably a heterocyclic reaction. Results obtained

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Regroupings and Migrations of Acyls in the Series  
of Aromatic Amines

SOV/74-28-2-5/5

by the regrouping of different alkylacylanilides are given in Table 1. The reaction is bribing in its effect due to the accessibility of the initial compounds, however, requires further investigation. On heating acylated diarylamines or a mixture of diarylamines and carboxylic acids, anhydrides or acid chlorides in the presence of  $ZnCl_2$  at 200-300° a shift of the acyl residue from nitrogen into the ortho-position toward the amino group and a cyclization into corresponding mesosubstituted acridines take place. Acridines can be obtained by means of regrouping of the previously synthesized acyl derivative of the diarylamine. However, the yield remains unchanged as in the case of the main reaction (Refs 49, 51, 66). Chemical, physiological and other characteristics of acridines are described in detail in Albert's monographs (Refs 76, 94). The problem of the regrouping mechanism of diacylanilides cannot be considered to be solved. Some investigation results of this reaction are summarized in Table 2. A special case is the regrouping of N-arylphtalimides taking place on its heating up to 200-225° with the alloy  $NaCl + AlCl_3$ . The

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Regroupings and Migrations of Acyls in the Series  
of Aromatic Amines

SOV/74-28-2-5/5

intermolecular nature of this reaction is obvious. In all cases investigated the reaction took place exclusively in the ortho-position to the amino group. In conclusion it may be stated that the regroupings of acyl radicals are of decisive importance to the synthesis of aromatic and heterocyclic amines which are important from a practical point of view. There are 2 tables and 117 references, 27 of which are Soviet.

Card 4/4

USCOMM-DC-60842

ARDASHEV, B. I.

AUTHORS: Ardashev, B. I., Minkin, V. I.

79-2-59/64

TITLE: Investigations in the Field of Quinoline Derivatives  
(Issledovaniya v oblasti proizvodnykh khinolina).  
XVII. Synthesis of Some 6- and 8- Alkoxy Quinolines  
(XVII. Sintez nekotorykh 6- i 8- alkoksikhinolinov).

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 545-546 (USSR)

ABSTRACT: The hitherto applied methods for the synthesis of alkoxy quinolines according to Skraup (ref. 1), Kon (ref. 4), Das et al. (ref. 6) were deficient. With a quiet reaction a good yield was achieved on the occasion of gradual addition of a mixture of amine, sulfuric acid, and glycerin to the oxidizing agent which was heated to a temperature higher than that of the reaction temperature. This method was suggested by Walter (ref. 10) and recommended by Manske (ref. 11). The present method has some advantages in comparison to the alkylation of the 8-oxy-quinoline according to Bedall (ref. 12) or Fränkel (ref. 13) or to the synthesis with arsenic acid according to Knüppel (ref. 14, 15). In the present work 6- and 8- methoxy quinoline as well as 6- and 8-ethoxy quinoline were synthesized according to the above mentioned altered method. The yields amounted to 38 - 64%, the specific data of the products are given.

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Investigations in the Field of Quinoline Derivatives.  
XVII. Synthesis of Some 6- and 8- Alkoxy Quinolines.

79-2-59/64

There are 17 references, 3 of which are Slavic.

ASSOCIATION: Rostov State University (Rostovskiy gosudarstvennyy universitet).

SUBMITTED: January 31, 1957

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: ~~Ardashev~~, B.I., Minkin, V.I. SOV/79-28-b-32/63

TITLE: Investigations in the Field of Quinoline Derivatives  
(Issledovaniya v oblasti proizvodnykh khinolina).  
XIX. New Method of Synthesis of Quinoline by Regrouping  
Acylated Arylamines (XIX. Novyy metod sinteza khinolinov  
peregruppirovkoy atsilirovannykh arilaminov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1578-  
1581 (USSR)

ABSTRACT: In the investigation of the lepidine regrouping of the  
ethyl acetanilides the authors carried out regroupings of  
a series of alkyl formalinides which take place on milder  
conditions in a nitrobenzene medium. The existing data  
permit to make the assumption that the catalytic regroupings  
of the alkyl acylanilides make possible the synthesis of  
various quinoline derivatives and that it appears as one  
of the few quinoline syntheses which have general character.  
The mechanism of the investigated regrouping differs from  
that of the reaction according to Pictet (Ref 12) (Pikte)  
and is not connected with any cleavage of the alkyl radical  
from nitrogen, as the  $\alpha, \beta$ -dimethyl indole to be expected in

Card 1/3



SOV/ 79-28-6-32/63

Investigations in the Field of Quinoline Derivatives. XIX. New Method  
of Synthesis of Quinoline by Regrouping Acylated Arylamines

this case in the conversion with hydrochloric aniline does not permit lepidine to be formed. As was found in the first stage of the reaction N,N'-diaryl-N-alkyl acylamidines is formed which is obtained on heating (150-160°) the amine salts with their acyl derivatives (Refs 16,17). The best yields of the products were actually obtained in using the amine salt at equivalent ratios. At higher temperature the amidines regroup to the anil of the corresponding o-aminocarbonyl compound which then cyclizes into the quinoline (see scheme). The investigated reaction in principle appears as a new method of the synthesis of quinoline. There are 1 table and 29 references, 13 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet  
(Rostov-na-Donu State University)

SUBMITTED: March 25, 1957  
Card 2/3

SOV/79-28-6-32/63

Investigations in the Field of Quinoline Derivatives. XIX. New Method  
of Synthesis of Quinoline by Regrouping Acylated Arylamines

1. Quinolines--Synthesis

Card 3/3

MINKIN, V.I.; ARDASHEV, B.I.

New means of preparing quinaldine bases and N-arylquinaldine salts by condensation of aryl amines with aldehydes. Part 20.  
Zhur.ob.khim. 28 no.9:2556-2560 S '58. (MIRA 11:11)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.  
(Quinaldine compounds) (Condensation products (Chemistry))

AUTHORS: Ardashev, B. I., Minkin, V. I.

SOV/79-29-1-43/74

TITLE: Investigations in the Field of Quinoline and Its Derivatives  
(Issledovaniya iz oblasti khinolina i yego proizvodnykh).  
XXI. Simultaneous Condensation of Aryl Amines With Hydracrylic Aldehyde (XXI. Sovmestnaya kondensatsiya arilaminov s gidrakilovym al'degidom)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1,  
pp 200 - 202 (USSR)

ABSTRACT: In a previous paper (Ref 1) Ardashev showed that hydracrylic aldehyde ( $\beta$ -oxypropionaldehyde) is capable of reacting in the Skraup reaction beside acrolein. In this connection it was of interest to investigate the reaction of some aromatic amines with this aldehyde in order to obtain quinolines. Apart from one patent by Chichibabin ("Ref 5) this reaction has hitherto remained unknown. It was found that already under the usual conditions of the Skraup synthesis, i.e. in the case of addition in drops of aldehyde to the reaction mixture at 120-140° quinoline is obtained in a yield of 15%. On using a lighter oxidizing agent, nitrobenzene sulfuric acid and by carrying out the reaction in a diluted solution

Card 1/2

Investigations in the Field of Quinoline and Its Derivatives. XXI. Simultaneous Condensation of Aryl Amines With Hydracrylic Aldehyde

SOV/72-29-1-43/74

with hydracrylic aldehyde, quinolines are obtained in yields up to 50%. Thus, the conclusion can be drawn that in the usual Skraup reaction with glycerin (also acrolein if no glycerin is available) part of the reaction is the reaction with hydracrylic aldehyde formed from glycerin or acrolein. This reaction was extended to diaryl amines. E.g. n-phenyl quinoline salt was synthesized from diphenyl amine. Thus, it was determined that it is also possible to introduce secondary amines into the modification of the Skraup synthesis, with hydracrylic aldehyde. Among some ways of reaction of this aldehyde with aryl amines which lead to quinolines the most probable one is shown in the scheme. There are 10 references, 7 of which are Soviet.

ASSOCIATION: Novochoerkasskiy politekhnicheskii institut (Novochoerkassk Polytechnical Institute)  
SUBMITTED: November 21, 1957

Card 2/2

5(3)

AUTHORS:

Minkin, V. I., Ardashev, B. I.

SOV/79-29-4-18/77

TITLE:

Investigations in the Field of Quinoline and Its Derivatives (Issledovaniya iz oblasti khinolina i yego proizvodnykh). XXIII. A New Method of Synthesis of Quinaldine Compounds and N-Aryl Quinaldine Salts (XXIII. Novyy sposob polucheniya khinal'dinovykh soyedineniy i N-arilkhinal'diniyevykh soley)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1129-1132 (USSR)

ABSTRACT:

The quaternary quinoline salts with an aryl radical on the nitrogen are important as initial products for the synthesis of cyanine dyes and photosensitizers (Ref 1). The best accessible substances of the quinoline arylates synthesized according to references 2 - 5 are the N-aryl quinaldine salts which are obtained according to Skraup (Ref 5). All synthesis methods known so far have the general disadvantage that they are little suitable for the introduction of higher fatty aldehydes into the reaction with diaryl amines. In connection with the above-said results the authors used the variation of quinaldine synthesis earlier devised by them (Ref 7) for

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Investigations in the Field of Quinoline and Its Derivatives. XXIII. A New Method of Synthesis of Quinaldine Compounds and N-Aryl Quinaldine Salts

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the purpose of synthesizing some hitherto unknown 2,3-dialkyl quinoline arylates from diaryl amines and higher fatty aldehydes (Ref 7). This synthesis is based on the separate performance of two steps of development: 1) On the formation of the dimers of vinyl diphenyl amine, which possibly exhibit cyclic structure (Ref 8), and 2) on their dehydrogenation to the quinoline derivatives. The first step is carried out in neutral, the second in acid medium. The formation of the N-aryl-2,3-dialkyl-quinoline salts can be illustrated in connection with the previously suggested scheme (Refs 7, 9) according to the given scheme. The yield of the reaction products in the form of their perchlorates is 20 - 65 %. One molecule of quinoline arylate is formed, accordingly, from 2 molecules of the initial diaryl amine. The primary aromatic amines in the form of their acyl derivatives yield, under equal conditions, also quinaldine products, probably according to the above scheme. The reaction described is of general importance. There are 11 references, 10 of which are Soviet.

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Investigations in the Field of Quinoline and Its  
Derivatives. XXIII. A New Method of Synthesis of  
Quinaldine Compounds and N-Aryl Quinaldine Salts

SOV/79-29-4-18/77

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut (Novocherkassk  
Polytechnic Institute)

SUBMITTED: January 14, 1958

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5(3)

SOV/79-29-9-53/76

AUTHORS: Ardashev, B. I., Tertov, B. A.

TITLE: Investigations in the Field of Quinoline and Its Derivatives.  
XXIII. N-Aryl Lepidinium Salts

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 3050-3052  
(USSR)

ABSTRACT: The rare papers published on the subject of quaternary N-aryl salts of quinoline and its derivatives are mentioned (Ref 1), and the papers by G.T. Plyugin et al. (Refs 2-5) are discussed in detail. The authors found that according to the method devised by them (Ref 6) diarylamines condense jointly with formaldehyde and ketones at normal pressure (Ref 6) under the formation of N-aryl lepidinium salts in a yield of 15-19% (Scheme). It is interesting to note that the introduction of nitrobenzene into the reaction mass increases the yield by four to five times. There are 6 Soviet references.

ASSOCIATION: Novochoerkasskiy politekhnicheskii institut (Novochoerkassk Polytechnic Institute)

SUBMITTED: July 22, 1958  
Card 1/1

S/079/60/030/05/53/074  
B005/B125

AUTHORS: Minkin, V. I., Ardashev, B. I., Tskhadadze, K. A.  
TITLE: The Condensation of Diaryl Amines With Isovaleraldehyde  
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1647-1649

TEXT: The synthesis of several previously unknown derivatives of N-aryl-2-isobutyl-3-isopropyl quinolines is described in the present report. The derivatives named were isolated in the form of their perchlorates. The production was carried out according to the Doebner-Miller reaction by the condensation of secondary aromatic amines with the aldehyde of the iso-valeric acid. The mechanism of this reaction was already investigated previously (Refs. 1, 2). The authors assume that the ring closure in asymmetrical diaryl amines occurs towards the more strongly nucleophilic aryl group. This assumption is in accord with the data of G. T. Pilyugin (Ref. 4). The reaction according to Doebner-Miller was also applied to secondary aliphatic-aromatic amines. The N-methyl quinaldinium perchlorate formed in negligible amount in the corresponding reaction of the methyl aniline. The formation of this product can be explained by the decomposition

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The Condensation of Diaryl Amines With  
Isovaleraldehyde

S/079/60/030/05/53/074  
B005/B125

of the intermediately forming dimer of the vinyl methyl aniline under the separation of methane (vide also Refs. 8, 9). The schemata of the formation of the normal reaction product and the by-product mentioned are given. The reaction worked out by the authors can be carried out on the one hand with various aromatic and aliphatic-aromatic secondary and acylated primary amines, and on the other hand with various aliphatic aldehydes; and it can generally be used for the synthesis of arylates and alkylates of quinaldine and of 2,3-dialkylquinoline. Nitrobenzene or another polar solvent can be used as a solvent. o-Nitrodiphenylamine, 2,4-dinitrodiphenylamine, and N-phenylanthranilic acid form no quinolinium salts, since these amines are too weakly basic. Also indole forms no quinolinium salt. All of the syntheses carried out are thoroughly described in the experimental section. The yield, melting point, and chlorine content are given for each synthesized product. The influence of the solvent on the yield of N-phenylquinaldinium perchlorate is given in a summary. There are 9 references, 6 of which are Soviet. ✓

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The Condensation of Diaryl Amines With Iso-  
valeraldehyde

S/079/60/030/05/53/074  
B005/B125

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-  
Donu State University) ✓

SUBMITTED: May 4, 1959

Card 3/3

ARDASHEV, B.I.; MINKIN, V.I.

Quinoline and its derivatives. Part 27: Joint condensation of  
glyceraldehyde and 3-phenylglyceraldehyde with aromatic amines.  
Zhur. ob. khim. 30 no.12:4005-4007 D '60. (MIRA 13:12)

1. Novocherkasskiy politekhnicheskiy institut.  
(Glyceraldehyde) (Amines)

ARDASHEV, B.I.; KAGAN, Ye.Sh.

Preparation of lepidine and its derivatives from aromatic  
amines and Mannich bases. Zhur. ob. khim. 34 no.7:2228-2230  
JI '64 (MIRA 17:8)

1. Novocherkasskiy politekhnicheskii institut.

KAGAN, Ye.Sh.; ARDASHEV, B.I.

Phenyllepidinium perchlorate. Metod. poluch. khim. reak.  
1 prepar. no. 11:99-101 '64. (MIRA 18:12)

1. Novocherkasskiy politekhnicheskiy institut. Submitted  
April 1964.

ARDASHEV, B.I.; KAGAN, Ye.Sh.

Lepidine. Metod. poluch. khim. reak. 1 prepar. no.11:63-64 '64.  
(MIRA 18:12)

1. Novocherkasskiy politekhnicheskii institut. Submitted  
April, 1964.



ARDASHEV, B.I.; MINKIN, V.I.

6. ~~Methoxy~~quinoline. Metod. poluch. khim. reak. i prepar.  
no. 11:80-81 '64. (MIRA 18:12)

1. Novocherkasskiy politekhnicheskiy institut. Submitted  
April 1964.

ARDASHEV, B.P., inzh.; MATHKEVICH, V.A., inzh.; SIDOROV, B.K., inzh.

Lumber carriers of the Vytegrales type. Sudostroenie 31 no.1:5-12  
Ja '65. (MIRA 18:3)

ARDASHEV, G. R.

"Investigation of the Effect of Wear of Grousers on the Traction Properties of a Wheel Tractor." Sub 4 Dec 51, All- Union Sci Res Inst of Mechanization and Electrification of Agriculture.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55.

1. ARDASHEV, G. R.

2. USSR (600)

4. Tractors-Motors

7. Flushing out lubrication systems of tractor motors. MTS 12 no.11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

ARDASHEV, G.R., kandidat tekhnicheskikh nauk.

Wear of lugs and its effect on the traction of wheeled tractors.

Trudy VIM 23:3-41 '56.

(MLRA 9:11)

(Tractors)

ARDASHEV, Gavriil Romanovich; BAZAROV, I.V.; MIKHAYLOV, I.N.; MORSHIN, A.V.; POLOTSKIY, I.V.; HUDENKO, A.I.; SITNIKOV, A.P.; SPERANOV, N.N.; KRYUKOV, V.L., red.; DEYEVA, V.M., tekhn.red.

[Maintenance of tractors and agricultural machinery] Tekhnicheskoe obsluzhivanie traktorov i sel'skokhoziaistvennykh mashin. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1961. 470 p.

(MIRA 14:4)

(Tractors--Maintenance and repair)  
(Agricultural machinery--Maintenance and repair)

ARDASHEV, G.R.; MIKHAYLOV, I.N.; ZAMORSKIY, V.V.; DOVGICH, I.A.;  
SEVERNEV, I.M.; DOMAN'KOV, V.M.; Prinimali uchastiye:  
FEDOSOV, I.M.; KRIVENKO, P.M.; KUDRYAVTSEV, P.R.;  
BARABANOV, V.Ye.; BRIL', E.P., red.; PARSHIN, V.G., tekhn.  
red.

[Technical maintenance of the KD-35, KDP-35, and T38  
tractors] Tekhnicheskii ukhod za traktorami KD-35, KDP-35  
i T38. Moskva, Biuro tekhn.informatsii GOSNITI, 1962. 153 p.  
(MIRA 16:10)

1. Russia 1923- U.S.S.R.) Ministerstvo sel'skogo khozyaystva. 2. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy tekhnologicheskii institut remonta i ekspluatatsii mashinno-traktornogo parka (for Ardashev, Mikhaylov, Fedosov, Krivenko, Kudryavtsev, Barabanov). 3. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Zamorskiy Dovgich). 4. Beloruskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Severnev, Doman'kov).  
(Tractors--Maintenance and repair)

ARDASHEV, Gavriil Romanovich, kand. tekhn. nauk; MIKHAYLOV,  
Igor' Nikolayevich, inzh.; MORSHIN, Aleksandr  
Vasil'yevich, kand. tekhn. nauk; SOLODENIKOVA, G.A.,  
red.

[Technical maintenance of the machinery and tractor fleet]  
Tekhnicheskoe obsluzhivanie mashinno-traktornogo parka.  
Moskva, Kolos, 1965. 526 p. (MIRA 18:7)



SAMOYLOVICH, D.M.; ARDASHEV, I.V.; BARINOVA, Ye.S.

Sensitivity specks of emulsions sensitized subsequently by gold and triethanolamine. Zhur. nauch. i prikl. fot. i kin. 10 no.1:16-22 Ja-F '65. (MIRA 18:4)

SAMOYLOVICH, D.M.; ARDASHEV, I.V.; BARINOVA, Ye.S.; RYABOVA, R.V.;  
YUKHNOVSKAYA, O.P.

Investigating the chemical ripening of type R emulsions. Zhur.  
nauch. i prikl.fot. i kin. 8 no.5:359-361 S-0 '63.  
(MIRA 16:9)

24.6610

S/020/62/145/003/008/013  
B125/B102

AUTHORS: Samoylovich, D. M., Barinova, Ye. S., and Ardashev, I. V.  
TITLE: Possibility of changing emulsion sensitivity by irradiation  
PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 3, 1962, 557 - 559

TEXT: The sensitivity of an emulsion can be very strongly affected by irradiation in the presence of free hydrogen ions. 400 $\mu$  thick samples of P(R) type emulsion without backing were immersed in solutions of various acids (of pH values from 1 to 5). One hour later they were exposed to  $\gamma$ -rays and neutrons from a Po-Be source, stored for 12 hours at pH 7, and then developed. The density of the proton and electron tracks is constant at pH 3, and depends neither on the kind of acid used nor on the pH value of its solution. Decreasing the pH value from 3 to 2 greatly reduces the density of the tracks, and relativistic particles are not recorded at all. Exposing the same emulsion to 8.6 BeV protons from the Dubna synchrocyclotron and treating it for two hours with sulphuric and nitric acid does not appreciably reduce the density of the tracks of relativistic particles down to pH2. Between pH2 and pH1 the relativistic  
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✓A

Possibility of changing ...

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B125/B102

tracks decrease very rapidly in density and number. The tracks due to nuclear decay resist treatment of the latent image with acid solutions of pH1. After irradiating the layer, (third series of experiments), the density of the recoil proton tracks is unchanged down to pH2 and reduced by about 10% at pH1. The reversible reduction of sensitivity in the presence of hydrogen ions depends on the competitive capture of electrons by  $Ag^+$  ions and mobile free  $H^+$  ions during the formation of the latent image. The irreversible reduction of sensitivity depends on the release of atomic silver in the acids. This irreversible process is infinitesimal when the emulsion is sensitized with gold. There are 2 figures. ✓A

PRESENTED: February 26, 1962, by I. K. Kikoinn, Academician

SUBMITTED: February 10, 1962

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